



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,606	02/18/2004	Michael J. Seals	060706-1960	8882
24504 7590 04/14/2008 THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP 600 GALLERIA PARKWAY, S.E. STE 1500 ATLANTA, GA 30339-5994				
EXAMINER				
TAYLOR, BARRY W				
ART UNIT		PAPER NUMBER		
2617				
MAIL DATE		DELIVERY MODE		
04/14/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/779,606

Applicant(s)

SEALS ET AL.

Examiner

Barry W. Taylor

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 19 and 20 recites the limitation "the system" in line one. There is insufficient antecedent basis for this limitation in the claim. Claims 19 and 20 appear to be directed towards "system" but depend upon "program" claim 12.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arvelo (7,082,107) in view of Shin et al (2005/0097409 hereinafter Shin).

Regarding claim 1. Arvelo teaches a method for output power dithering for improved transmitter performance (title, abstract), the method comprising:

transmitting a plurality of packets at a first output power (title, abstract, figures 1 and 3, col. 3 lines 12-33, col. 3 line 63 – col. 4 line 65, col. 5 lines 21-61, col. 10 lines 37-46) ;

determining a first error rate associated with the transmission of the plurality of packets at the first output power (title, abstract, figures 1 and 3, col. 3 lines 12-33, col. 3 line 63 – col. 4 line 65, col. 5 lines 21-61, col. 10 lines 37-46);

transmitting the plurality of packets at least one second output power different from the first output power (title, abstract, figures 1 and 3, col. 3 lines 12-33, col. 3 line 63 – col. 4 line 65, col. 5 lines 21-61, col. 10 lines 37-46);

determining at least one second error rate associated with the transmission at the at least one second output power (title, abstract, figures 1 and 3, col. 3 lines 12-33, col. 3 line 63 – col. 4 line 65, col. 5 lines 21-61, col. 10 lines 37-46); and

identifying a desired output power based at least in part on a comparison between the first error rate and the at least one second error rate (title, abstract, figures 1 and 3, col. 3 lines 12-33, col. 3 line 63 – col. 4 line 65, col. 5 lines 21-61, col. 10 lines 37-46).

According to Applicants, Arvelo does not compare error rates to control output power (see paper dated 5/6/07, page 6). The Examiner notes that Arvelo teaches using ACKs and NACKs so that the transmitter will know to re-transmit the data that had the error (col. 5 lines 21-61). Arvelo clearly teaches the transmitter compares the number

of errors to thresholds and if the power level at the transmitter needs to be adjusted to achieve the desired signal quality, then the transmitter either increases or decreases the power level accordingly (col. 5 lines 21-61).

In order to advance prosecution, Shin also teaches a method for controlling a power level based on a packet error rate (title, abstract, 0018, 0054 – 0060, 0061 - 0065) to secure quality of service in a wireless network (paragraph 0016) and to ensure the best possible transmission power level (paragraph 0066).

It would have been obvious for any one of ordinary skill in the art at the time of invention to modify the power control method and system as taught by Arvelo to compare PER at the transmitter as taught by Shin in order to allow the transmitter to adjust its own power level thereby ensuring that the transmitter maintains the best possible transmission power level as disclosed by Shin.

Regarding claim 2, Arvelo teaches a method for output power dithering for improved transmitter performance (title, abstract), the method comprising:

transmitting a plurality of packets at a first output power; determining a first error rate associated with the transmission of the plurality of packets at the first output power; transmitting the plurality of packets at a second output power if the first error rate is greater than a predetermined error rate value, wherein the second output power is different from the first output power; determining a second error rate associated with the transmission at the second output power; and adjusting the second output power if the second error rate is lower than the first error rate (title, abstract, figures 1 and 3, col. 3 lines 12-33, col. 3 line 63 – col. 4 line 65, col. 5 lines 21-61, col. 10 lines 37-46).

According to Applicants, Arvelo does not compare error rates to control output power (see paper dated 5/6/07, page 6). The Examiner notes that Arvelo teaches using ACKs and NACKs so that the transmitter will know to re-transmit the data that had the error (col. 5 lines 21-61). Arvelo clearly teaches the transmitter compares the number of errors to thresholds and if the power level at the transmitter needs to be adjusted to achieve the desired signal quality, then the transmitter either increases or decreases the power level accordingly (col. 5 lines 21-61).

In order to advance prosecution, Shin also teaches a method for controlling a power level based on a packet error rate (title, abstract, 0018, 0054 – 0060, 0061 - 0065) to secure quality of service in a wireless network (paragraph 0016) and to ensure the best possible transmission power level (paragraph 0066).

It would have been obvious for any one of ordinary skill in the art at the time of invention to modify the power control method and system as taught by Arvelo to compare PER at the transmitter as taught by Shin in order to allow the transmitter to adjust its own power level thereby ensuring that the transmitter maintains the best possible transmission power level as disclosed by Shin.

Regarding claim 3. Arvelo teaches where the second output power is adjusted until a desired value of the second error rate is reached (title, abstract, figures 1 and 3, col. 3 lines 12-33, col. 3 line 63 – col. 4 line 65, col. 5 lines 21-61, col. 10 lines 37-46). Shin also teaches the output power is adjusted until a desired value of the second error rate is reached (paragraphs 0018, 0054 – 0065, and paragraph 0066).

Regarding claim 4. Arvelo teaches transmitting the plurality of packets at a third output power if the second error rate is not lower than' the first error rate, wherein the third output power is different from the first output power and the second output power; determining a third error rate associated with the transmission at the third output power; and adjusting the third output power if the third error rate is lower than the first error rate (title, abstract, figures 1 and 3, col. 3 lines 12-33, col. 3 line 63 – col. 4 line 65, col. 5 lines 21-61, col. 10 lines 37-46). Shin also teaches increasing or decreasing output power in conjunction with PER (paragraphs 0018, 0054 – 0065, and paragraph 0066).

Regarding claim 5. Arvelo teaches transmitting the plurality of packets at the first output power if the third error rate is not lower than the first error rate (col. 4 lines 43-50).

Regarding claim 6. Arvelo teaches resuming transmission of the plurality of packets at the first output power if the first error rate or the second error rate is not determined based on a predetermined criterion (col. 4 lines 43-50).

Regarding claim 7. Arvelo teaches the first error rate and the second error rate are determined based on a number of failed acknowledgements of transmitted packets (col. 5 lines 21-50).

Regarding claim 8. Arvelo teaches transmission at the first output power and second output power is associated with a variable data rate (title, abstract, col. 3 lines 12-13).

Regarding claim 9. Arvelo teaches wherein the first error rate, the second error rate and the predetermined error rate value are associated with the variable data rate

(title, abstract, col. 3 lines 12-13). Shin also teaches adjusting output power based on PER (paragraphs 0018, 0054 – 0065, and paragraph 0066).

Regarding claim 10. Arvelo teaches a system for output power dithering for improved transmitter performance (title, abstract), the system comprising:

a transmitter that transmits a plurality of packets at a first output power (title, abstract, figures 1 and 3, col. 3 lines 12-33, col. 3 line 63 – col. 4 line 65, col. 5 lines 21-61, col. 10 lines 37-46); and

a processor that determines a first error rate associated with the transmission of the plurality of packets at the first output power;

causes the transmitter to transmit the plurality of packets at least one second output power (title, abstract, figures 1 and 3, col. 3 lines 12-33, col. 3 line 63 – col. 4 line 65, col. 5 lines 21-61, col. 10 lines 37-46);

determines at least one second error rate associated with the transmission at the at least one second output power (title, abstract, figures 1 and 3, col. 3 lines 12-33, col. 3 line 63 – col. 4 line 65, col. 5 lines 21-61, col. 10 lines 37-46); and

identifies a desired output power based at least in part on a comparison between the first error rate and the at least one second error rate (title, abstract, figures 1 and 3, col. 3 lines 12-33, col. 3 line 63 – col. 4 line 65, col. 5 lines 21-61, col. 10 lines 37-46).

According to Applicants, Arvelo does not compare error rates to control output power (see paper dated 5/6/07, page 6). The Examiner notes that Arvelo teaches using ACKs and NACKs so that the transmitter will know to re-transmit the data that had the error (col. 5 lines 21-61). Arvelo clearly teaches the transmitter compares the number

of errors to thresholds and if the power level at the transmitter needs to be adjusted to achieve the desired signal quality, then the transmitter either increases or decreases the power level accordingly (col. 5 lines 21-61).

In order to advance prosecution, Shin also teaches a method for controlling a power level based on a packet error rate (title, abstract, 0018, 0054 – 0060, 0061 - 0065) to secure quality of service in a wireless network (paragraph 0016) and to ensure the best possible transmission power level (paragraph 0066).

It would have been obvious for any one of ordinary skill in the art at the time of invention to modify the power control method and system as taught by Arvelo to compare PER at the transmitter as taught by Shin in order to allow the transmitter to adjust its own power level thereby ensuring that the transmitter maintains the best possible transmission power level as disclosed by Shin.

Regarding claim 11. Arvelo teaches a system for output power dithering for improved transmitter performance (title, abstract), the system comprising:

means for transmitting a plurality of packets at a first output power (title, abstract, figures 1 and 3, col. 3 lines 12-33, col. 3 line 63 – col. 4 line 65, col. 5 lines 21-61, col. 10 lines 37-46);

means for determining a first error rate associated with the transmission of the plurality of packets at the first output power (title, abstract, figures 1 and 3, col. 3 lines 12-33, col. 3 line 63 – col. 4 line 65, col. 5 lines 21-61, col. 10 lines 37-46);

means for transmitting the plurality of packets at least one second output power different from the first output power (title, abstract, figures 1 and 3, col. 3 lines 12-33, col. 3 line 63 – col. 4 line 65, col. 5 lines 21-61, col. 10 lines 37-46);

means for determining at least one second error rate associated with the transmission at the at least one second output power (title, abstract, figures 1 and 3, col. 3 lines 12-33, col. 3 line 63 – col. 4 line 65, col. 5 lines 21-61, col. 10 lines 37-46); and

means for identifying a desired output power based at least in part on a comparison between the first error rate and the at least one second error rate (title, abstract, figures 1 and 3, col. 3 lines 12-33, col. 3 line 63 – col. 4 line 65, col. 5 lines 21-61, col. 10 lines 37-46).

According to Applicants, Arvelo does not compare error rates to control output power (see paper dated 5/6/07, page 6). The Examiner notes that Arvelo teaches using ACKs and NACKs so that the transmitter will know to re-transmit the data that had the error (col. 5 lines 21-61). Arvelo clearly teaches the transmitter compares the number of errors to thresholds and if the power level at the transmitter needs to be adjusted to achieve the desired signal quality, then the transmitter either increases or decreases the power level accordingly (col. 5 lines 21-61).

In order to advance prosecution, Shin also teaches a method for controlling a power level based on a packet error rate (title, abstract, 0018, 0054 – 0060, 0061 - 0065) to secure quality of service in a wireless network (paragraph 0016) and to ensure the best possible transmission power level (paragraph 0066).

It would have been obvious for any one of ordinary skill in the art at the time of invention to modify the power control method and system as taught by Arvelo to compare PER at the transmitter as taught by Shin in order to allow the transmitter to adjust its own power level thereby ensuring that the transmitter maintains the best possible transmission power level as disclosed by Shin.

Regarding claim 12. Arvelo teaches a computer readable medium having code for causing a processor to perform output power dithering for improved transmitter performance (title, abstract, col. 9 lines 38-46), the computer readable medium comprising:

code adapted to transmit a plurality of packets at a first output power (title, abstract, figures 1 and 3, col. 3 lines 12-33, col. 3 line 63 – col. 4 line 65, col. 5 lines 21-61, col. 10 lines 37-46);

code adapted to determine a first error rate associated with the transmission of the plurality of packets at the first output power (title, abstract, figures 1 and 3, col. 3 lines 12-33, col. 3 line 63 – col. 4 line 65, col. 5 lines 21-61, col. 10 lines 37-46);

code adapted to transmit the plurality of packets at least one second output power different from the first output power (title, abstract, figures 1 and 3, col. 3 lines 12-33, col. 3 line 63 – col. 4 line 65, col. 5 lines 21-61, col. 10 lines 37-46);

code adapted to determine at least one second error rate associated with the transmission at the at least one second output power (title, abstract, figures 1 and 3, col. 3 lines 12-33, col. 3 line 63 – col. 4 line 65, col. 5 lines 21-61, col. 10 lines 37-46); and

code adapted to identify a desired output power based at least in part on a comparison between the first error rate and the at least one second error rate (title, abstract, figures 1 and 3, col. 3 lines 12-33, col. 3 line 63 – col. 4 line 65, col. 5 lines 21-61, col. 10 lines 37-46).

According to Applicants, Arvelo does not compare error rates to control output power (see paper dated 5/6/07, page 6). The Examiner notes that Arvelo teaches using ACKs and NACKs so that the transmitter will know to re-transmit the data that had the error (col. 5 lines 21-61). Arvelo clearly teaches the transmitter compares the number of errors to thresholds and if the power level at the transmitter needs to be adjusted to achieve the desired signal quality, then the transmitter either increases or decreases the power level accordingly (col. 5 lines 21-61).

In order to advance prosecution, Shin also teaches a method for controlling a power level based on a packet error rate (title, abstract, 0018, 0054 – 0060, 0061 - 0065) to secure quality of service in a wireless network (paragraph 0016) and to ensure the best possible transmission power level (paragraph 0066).

It would have been obvious for any one of ordinary skill in the art at the time of invention to modify the power control method and system as taught by Arvelo to compare PER at the transmitter as taught by Shin in order to allow the transmitter to adjust its own power level thereby ensuring that the transmitter maintains the best possible transmission power level as disclosed by Shin.

Regarding claims 13-14. Arvelo teaches using ACKs and NACKs so the transmitter will know to re-transmit the data that had the error with an adjusted output power level but does so without comparing error rates.

Shin teaches a method for controlling a power level based on a packet error rate (title, abstract, 0018, 0054 – 0060, 0061 - 0065) to secure quality of service in a wireless network (paragraph 0016) and to ensure the best possible transmission power level (paragraph 0066).

It would have been obvious for any one of ordinary skill in the art at the time of invention to modify the power control method and system as taught by Arvelo to compare PER at the transmitter as taught by Shin in order to allow the transmitter to adjust its own power level thereby ensuring that the transmitter maintains the best possible transmission power level as disclosed by Shin.

Regarding claim 15. Arvelo teaches resuming transmission of the plurality of packets at the first output power if the first error rate or the second error rate is not determined based on a predetermined criterion (col. 4 lines 43-50).

Regarding claim 16. Arvelo teaches using ACKs and NACKs so the transmitter will know to re-transmit the data that had the error but does so without comparing error rates.

Shin teaches a method for controlling a power level based on a packet error rate (title, abstract, 0018, 0054 – 0060, 0061 - 0065) to secure quality of service in a wireless network (paragraph 0016) and to ensure the best possible transmission power level (paragraph 0066).

It would have been obvious for any one of ordinary skill in the art at the time of invention to modify the power control method and system as taught by Arvelo to compare PER at the transmitter as taught by Shin in order to allow the transmitter to adjust its own power level thereby ensuring that the transmitter maintains the best possible transmission power level as disclosed by Shin.

Regarding claim 17. Arvelo teaches transmission at the first output power and second output power is associated with a variable data rate (title, abstract, col. 3 lines 12-13).

Regarding claim 18. Arvelo teaches wherein the first error rate, the second error rate and the predetermined error rate value are associated with the variable data rate (title, abstract, col. 3 lines 12-13). Shin also teaches adjusting output power based on PER (paragraphs 0018, 0054 – 0065, and paragraph 0066).

Regarding claim 19. Arvelo teaches using ACKs and NACKs so the transmitter will know to re-transmit the data that had the error with an adjusted output power level but does so without comparing error rates.

Shin teaches a method for controlling a power level based on a packet error rate (title, abstract, 0018, 0054 – 0060, 0061 - 0065) to secure quality of service in a wireless network (paragraph 0016) and to ensure the best possible transmission power level (paragraph 0066).

It would have been obvious for any one of ordinary skill in the art at the time of invention to modify the power control method and system as taught by Arvelo to compare PER at the transmitter as taught by Shin in order to allow the transmitter to

Art Unit: 2617

adjust its own power level thereby ensuring that the transmitter maintains the best possible transmission power level as disclosed by Shin.

Regarding claim 20. Applicants define 802.11 protocol to be technique that requires feedback from the receiver to adjust the transmitter (see Applicants specification page 2, lines 13-15). Arvelo teaches receiver sending ACK or NACK to transmitter so the transmitter will know to re-transmit the data that had the error (col. 5 lines 21-50).

Response to Arguments

3. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

---(2007/0021071) Brouwer teaches that it is advantageous to operate a system at various retransmission rates depending on BLOCK ERROR RATES (see at least paragraph 0038) and comparison of BLER (see last nine lines of paragraph 0041 and the last seven lines of paragraph 0046 and the last seven lines of independent claim 54).

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barry W. Taylor, telephone number (571) 272-7509, who is available Monday-Thursday, 6:30am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost, can be reached at (571) 272-7872. The central facsimile phone number for this group is **571-273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 2600 receptionist whose telephone number is (571) 272-2600, the 2600 Customer Service telephone number is (571) 272-2600.

Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Centralized Delivery Policy: For patent related correspondence, hand carry deliveries must be made to the Customer Service Window (now located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314), and facsimile transmissions must be sent to the central fax number (571-273-8300).

/Barry W Taylor/
Primary Examiner, Art Unit 2617